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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,746	07/07/2003	Hiroyuki Kanai	1858-38	5616
23117	7590	10/21/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			SELLERS, ROBERT E	
			ART UNIT	PAPER NUMBER

1712

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/613,746	Applicant(s) KANAI, HIROYUKI	
	Examiner Robert Sellers	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/29/2003</u> | 6) <input type="checkbox"/> Other: _____ |

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Claim 12 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 6, 2005.

1. The trade names of the epoxycyclohexyl group-containing compounds identified by Celloxide and Epolead in the specification on page 10, the second paragraph should be capitalized.
2. The species of cyclic acetal compound named as 1,3-dioxolane and ethylene glycol formal on page 7, the third paragraph, lines 2 and 3 are synonymous according to Chemical abstracts registry no. 646-06-0. The ethylene glycol formal on line 3 should be deleted and inserted in parentheses following 1,3-dioxolane in line 2.
3. The word "initiator" is misspelled in claim 2, line 3.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1, 4, 5, 7, 8 and 14-16, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Finter et al. Patent No. 6,001,428.

4. Finter et al. discloses a photo-curable (col. 6, lines 3-11) composition comprising a mixture of a solid polyglycidyl ether or ester and a cyclic acetal (col. 2, lines 12-15) including dioxolane (col. 3, line 35) and from 0.05 to 3% by weight (col. 2, lines 20-21) of a triarylsulfonium hexafluorophosphate photoinitiator (col. 5, lines 11-12).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finter et al.

Finter et al. is described hereinabove. The claimed broad proportions of cyclic acetal compound and epoxy compound of claim 2 and the narrower parameters of claim 3 wherein the epoxy compound is present in the major amount are not recited. It would have been obvious to employ the mixture of solid polyglycidyl ether or ester and cyclic acetal wherein the solid polyglycidyl ether or ester is present in a majority within the confines of the range of claim 3 in order to increase the T_g of the formulation (col. 3, lines 28-29).

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Claims 1-5, 7, 8 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa et al. Patent No. 5,434,196 (equivalent to Japanese Patent No. 1-213304 cited in the Information Disclosure Statement filed December 29, 2003)

5. Ohkawa et al. sets forth a photo-curable (col. 13, lines 21-26) formulation having a viscosity of 200 cps or below (col. 13, lines 1-3) containing a cationically polymerizable organic substance (col. 1, lines 10-14) such as an epoxy compound (col. 2, lines 60-64) including the elected species of 3,4-epoxycyclohexylmethyl 3,4-epoxycyclohexanecarboxylate (col. 3, lines 10-11), an cyclic acetal compound such as the elected species of trioxane (col. 3, lines 51-52), mixtures thereof (col. 3, lines 66-68), and from 0.1-15 parts by weight per 100 parts by weight of the cationically polymerizable organic substance (col. 5, lines 3-8) of a triarylsulfonium salt (col. 15, Example 2, lines 35-36).

6. The claimed mixture of cyclic acetal compound and epoxy compound is disclosed but not exemplified. The mixture of a polyglycidyl ether or ester and a cyclic acetal is affirmatively described in column 2, lines 12-15. It would have been obvious to combine the polyglycidyl ether or ester such as the alicyclic epoxy resin with the cyclic acetal wherein the alicyclic epoxy resin is present in a majority in order to improve the cationic polymerizability, low viscosity, ultraviolet transmission, the setting characteristics of a thick film and volume shrinkage (col. 4, lines 1-5).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Finter et al. and Ohkawa et al. as applied to the claims hereinabove, and further in view of Yamamura et al. Patent No. 5,981,616 (equivalent to Japanese Patent No. 10-168165 cited in the Information Disclosure Statement).

7. The blending of the epoxy compound with an epoxy polymer having a number average molecular weight of from 1000-20,000 is not recited. Yamamura et al. (col. 2, lines 56-61) teaches a photo-curable resin composition prepared from an oxetane compound, an epoxy compound which is preferably an epoxy compound having a number average molecular weight of from 1000-20,000 (col. 8, lines 40-48) and a cationic photoinitiator such as a triarylsulfonium salt (col. 11, lines 23-25).

8. It would have been obvious to incorporate the high molecular weight epoxy compound of Yamamura et al. together with the epoxy compound of Finter et al. and Ohkawa et al. in order to enhance the viscosity, the photo-fabrication time and the toughness (Yamamura et al., col. 8, lines 44-48).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

rs
10/17/2005



ROBERT E.L. SELLERS
PRIMARY EXAMINER